

Swinging Bridges of the Cowpasture and Bullpasture Rivers
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Editor's note: The following essay is the nineteenth in a five-year series on water resource stewardship in the Cowpasture River Watershed, edited by the Cowpasture River Preservation Association and published by The Recorder. The goal of the series is to create awareness among students, citizens and officials of the critical need to protect our surface and ground water resources, and to stimulate interest in progressive stewardship.

WILLIAMSVILLE – Pure childhood nostalgia and pastoral romance!!! A swinging bridge over a babbling frolicking creek in the fall or a slow moving lazy river in the summer time or a rocky gorge along the Appalachian Mountains. Grandma or grandpa calling out their heart-felt warnings, “Don't run!!!” But it was pure joy to feel that old bridge sway and nobody even came close to falling into the cool, clear waters.

Purposes:

Suspension (or swinging) bridges were built by engineers, foresters and farmers for practical purposes including: public access to federal or state recreational lands, private access to seasonal homes and camps, and pedestrian crossings at river fords or low-water crossings. Local folklore suggests that an important purpose in many cases may have been to allow rural children to cross a river or a creek at a wagon or automobile ford for boarding a school bus or other transportation.

Engineering:

Suspension bridge design and construction requires some engineering know-how, however, this simple bridge type is found around the world in China, India, Japan, Mexico, Peru, Tibet and the United States. The Jacob Creek Bridge in Pennsylvania was built by James Finley in 1801 and it is believed to be the first suspension bridge in America. The Wheeling, West Virginia Suspension Bridge by built by Charles Ellet was a significant early design of an American suspension bridge. John Roebling designed in the 1870s the now famous Brooklyn Bridge in New York City which was finished in about 1883. Still the most famous suspension bridge in the United States is arguably the Golden Gate Bridge in San Francisco constructed in the 1929-1937 time frame.

A suspension bridge consists of four fundamental engineered components: a vehicle or pedestrian deck hung from vertical wires, the horizontal suspension cables, the supporting towers, and the dead-weight anchors. The suspension cables act in tension, pass over the towers and afterwards are anchored on each end of the bridge in masonry, concrete or stone. The sagging cables create a curved or bowed effect across the span of the bridge. In these rural settings, wire hangers attached to the bridge main cables support in tension a pedestrian bridge-deck. The supporting towers under compression are built of wood, stone or steel.

Builders:

In the Cowpasture River watershed, swinging bridges were built by the Virginia Department of Game

and Inland Fisheries, the U. S. Forest Service, the Virginia Department of Transportation, and most importantly, by private associations and landowners. The Virginia Department of Game and Inland Fisheries built the swinging bridge across the Bullpasture River Gorge. The Virginia Department of Transportation repairs and maintains three swinging bridges in the watershed on the Cowpasture River along Junction Road or State Route 628, on the Cowpasture River at Griffith and State Route 930, and over Pads Creek at Griffith and Route 930. The U.S. Forest Service built the swinging bridges at both the George Washington National Forest's Walton and Wallace Tracts. Landowner associations and private individuals most importantly have built all of the remaining 16 swinging bridges. Curtis (Mac) Beard, Jr. of Clifton Forge has designed and built three swinging bridges across the Cowpasture River, one swinging bridge across the Maury River at Panther Gap, and a fifth across Wilson's Creek in Douthat State Park.



Bullpasture River Gorge Swinging Bridge
Owned and Operated by the VDGIF Highland Wildlife Management Area
Photographic Attribution Hereby Given to Kathy Farmer

Byrd Road Act:

In Virginia, the Byrd Roads Act of 1932 transferred the responsibility for roads and bridges from local jurisdictions to what is now known as the Virginia Department of Transportation (VDOT). A handful of the more prosperous and independent jurisdictions did not relinquish their authority over roads and

bridges, but Alleghany, Bath and Highland Counties were not among those holdouts. There may be swinging bridges, nevertheless, that were built by these three counties prior to 1932 and that were not included in the VDOT inventory. Local oral history suggests that some swinging bridges may have been built under the auspices of the New Deal's "Work Programs (Projects) Administration".

Bullpasture River Gorge Swinging Bridge:

The Bullpasture Gorge swinging bridge is owned and operated by the Virginia Department of Game and Inland Fisheries. This classical swinging bridge with a 161 feet span, 18 ½ feet tall wooden towers, a 33 inches wide pedestrian deck and American wire fence for safety rails was built in the mid-to-late 1960s by two staff members of the "Commission of Game and Inland Fisheries" – Roy Hodge and Andy Hupman. Located two and a half miles north of Williamsville on Indian Draft Road or Virginia Route 678, the Bullpasture Gorge bridge provides **public access** into the Highland Wildlife Management Area, Bullpasture Mountain Tract and to the east bank of the Bullpasture River for naturalists, photographers, birders, painters, fly fishermen, hunters, trappers, hikers, bicyclists and primitive campers. The Highland Wildlife Management Area features an Appalachian oak and hickory forest, small wildlife clearings, and soft mast plantings – apple, cherry and dogwood. Game species include black bear, whitetail deer, wild turkey, grouse, squirrels and rabbits. The Bullpasture River is a well stocked mountain stream with trout in cool clear waters that will delight almost any fisherman, woman or youngster. The Bullpasture Gorge itself is a scenic waterway with cliffs and large boulders and presents a sometimes dangerous challenge to the white-water enthusiast. This area is stocked with trout under the state put-and-take system. The Bullpasture River from its confluence with the Cowpasture River north and including the Bullpasture Gorge, is eligible for designation under the National Wild and Scenic Rivers Act because it is free-flowing with outstandingly remarkable scenic, recreational, and geologic values.

GWNF Wallace Tract Swinging Bridge:

- Location: South of Williamsville 2.2 miles and east along Forest Road 282 another 0.8 miles.
- Latitude: 38° 9'59.48"N and Longitude: 79°34'36.62"W
- Documentation: Google Earth Pro satellite imagery, USGS Williamsville 7.5 Minute Quadrangle.
- Internet Reference: <http://www.sahale.com/kimberling.htm>
- Owner: U.S. Forest Service, North River Ranger District
- Purpose: Provides **public access** to the USFS GWNF Wallace Tract for hiking, bicycling, hunting, fishing and primitive camping.
- Bridge Builder: Mack McFarland
- Date: 1991-92
- Span Length: 150'
- Travel Deck Width: 3'
- Tower Height: 34' tall CCA treated southern yellow pine.
- Anchor Type: 14 cubic yards of concrete deadmen /w/ 1-1/2" ASTM A 307 rod each mainline.
- Mainline Size: 1", ASTM A 603, 7x7 Wire Rope



USFS GWNF North River Ranger District, Wallace Tract Swinging Bridge
Demonstrating Classic Wooden Bridge Towers, Deck and Rails
Photographic Attribution Hereby Given to C. Nelson Hoy

- Construction Company: Sahale, LLC built this bridge for the U.S. Forest Service based on a traditional design supplied by the National Park Service. The treated timber towers are set in concrete abutments and the mainlines are anchored to concrete deadmen using fabricated steel rods. Cable suspenders support a floor beam and diaphragm braced stringer deck system. The railing consists of dimensional horizontal rails affixed to 4 x 4 posts, which in turn are attached to the stringer box frame. The bridge was erected by pre-assembling the tower poles on the ground and tilting them into position, then casting the abutment concrete in place. Skylines were used for erection of the main span, including installation of suspenders, floor beams, and stringers.” SOURCE: Sahale, LLC website.

Walton Tract Swinging Bridge:

The GWNF Walton Tract swinging bridge is owned and operated by the U.S Forest Service, Warm Springs Ranger District and it provides **public access** to the George Washington National Forest on the

west side of the Cowpasture River for naturalists, photographers, birders, painters, fly fishermen, hunters, trappers, hikers, bicyclists and primitive campers. The Walton Tract is located five and a half miles south of Millboro Springs along Virginia State Route 42 and one and six tenths miles west along Virginia Route 632 or Grizer's Gap Road and then, Wallawhatoola Road. The woodlands and fields found along both sides of the Cowpasture River provide a diversity of wildlife habitats with wildflowers to enjoy in the spring and early summer while the River itself may be more directly experienced by canoe. Wildlife viewing opportunities for bird enthusiasts along the river banks include green and great blue herons, wood ducks, belted kingfishers, pileated woodpeckers, blue jays, American crows, white-eyed vireos, red-tailed hawks and turkey vultures. Reptile enthusiasts can enjoy spotting bullfrogs, eastern painted turtles, occasional northern water snakes and black rat snakes. Game species include black bear, whitetail deer, wild turkeys, rabbits, racoons, squirrels, muskellunge, perch and small mouth bass. The Walton Tract swinging bridge, most likely constructed in the late 1970s, spans 218 ½ feet across the Cowpasture River, features 32 feet tall steel I-beam towers and the pedestrian deck is 30 inches wide.



USFS GWNF Warm Springs Ranger District, Walton Tract Swinging Bridge
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Burnett Swinging Bridge:

A swinging bridge over the Cowpasture River in its mid-reaches has served local families for three or

four generations. The original swinging bridge at this location was most likely built post-World War II. Several decades ago, however, a Colonel Coffee known in local folklore for greeting canoeists with a shotgun for trespassing on “his” river cut the bridge down arguably because hunters were crossing the Cowpasture to the Colonel's side. Edward Walters, Sr. subsequently built a cable trolley to ferry family members, guests and their provisions across the Cowpasture River. But before the cable trolley, Eddie Walters, Jr. remembers hiking north to the Virginia Elk Youth Camp swinging bridge to cross the Cowpasture River in high water on his way to school. The Walters family in 1988 commissioned Curtis (Mac) Beard of Clifton Forge to build an new swinging bridge across the Cowpasture. This swinging bridge, according to Mac Beard's recollections, is unique among Cowpasture River bridges in that as many triangles as possible were incorporated in the design. A triangle is a stable element in construction especially in swinging bridges. The top pick-up cables formed triangles-left and



Burnett Family Swinging Bridge Over the Cowpasture River
Painting by Nan Mahone Wellborn with Oil on Canvas.

-right, the towers were set at angles to form triangles at both ends, and the pedestrian deck was about 54 inches wide at both ends but reduced to 38 inches at the middle to form two more triangles. Flying braces were fabricated by Joe Wood to pull the cables to the correct width across the span. Thus the Walter's bridge is a stable structure more like a sidewalk than a swinging bridge. Edward Walters, Sr., his grandson Roland and Mac Beard put down the pedestrian deck. Mac fondly remembers the project as, "a wonderful experience". This swinging bridge now known as the Burnett Swinging Bridge provides **private access** to family-owned property on the west side of the Cowpasture River.

Aesthetic Values:

Swinging Bridges along the Bullpasture and Cowpasture Rivers create special opportunities for both residents and visitors to enjoy the aesthetic values of these pastoral waterways. Citizens gain more convenient access to public lands for hunting, fly fishing, photography, painting and quiet enjoyment. Local photographer, Kathy Farmer, has captured a dozen outstanding photographic images of swinging bridges along the Bullpasture and Cowpasture Rivers. Nan Mahone Wellborn of Roanoke and Highland County has painted with oil on canvas a Cowpasture River swinging bridge and many waterscapes.

Intrepid Explorers:

In the Cowpasture River watershed, there are about 22 swinging bridges. Google Earth Pro was used for desk-top reconnaissance and 20 of these bridges were found with space satellite imagery. But because the River is sometimes hidden in defilade by steep terrain or heavy foliage along narrow stretches, it is possible to miss a swinging bridge when using space-based imagery. Two swinging bridges were therefore found by ground reconnaissance.

Across the northern Cowpasture River there are at least four swinging bridges – the Opal Alt Farm Bridge, the Wright Family Bridge, the Salmons Family Bridge and the Meadows Family Bridge. Across the Bullpasture River there are at least three suspension bridges – the Neil Family Bridge, the Crooks Family Bridge and the VDGIF Bullpasture River Gorge Bridge. Across the southern Cowpasture River there are another 15 swinging bridges – the Bullpasture and Cowpasture Confluence Bridge, the USFS GWNF Wallace Tract Bridge, the Baxton Farm Bridge, the Riverjack Lane Bridge, the USFS GWNF Walton Tract Bridge, the Horeb Baptist Church Bridge, the Lynchburg Camp Bridge, the Christians Farm Bridge, the Highlander Hunt Club Bridge, the Burnett Family Bridge, the VDOT Griffith Cowpasture Bridge, the VDOT Pads Creek Bridge, the Beard Family Bridge, the Nicely Family Bridge, and the River View Bridge.

Research Sources:

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